

## Claims

[c1] What is claimed is:

1. An access controlling method used in an optical storage carrier drive, the optical storage carrier drive comprising a rotative mechanism for rotating an optical storage carrier, a data access device for recording data to a track formed on the optical storage carrier, and a look-up table, the track comprising a plurality of data units, each data unit capable of passing by the data access device for recording data thereon, the plurality of data units being sequentially divided into a first data block and a second data block, the look-up table storing a linear velocity corresponding to each data block, the method comprising steps of:

selecting a targeted data unit from the plurality of data units;

determining a targeted data block where the targeted data unit is located, the targeted data block corresponding to one of the first and the second data blocks;

determining a targeted linear velocity corresponding to the targeted data block through reading the look-up table;

controlling the rotative mechanism rotated in the targeted linear velocity; and

recording data to the targeted data unit by moving the data access device to the targeted data unit.

[c2] 2. The controlling method of claim 1 wherein the number of data units in each data block is approximately equal.

[c3] 3. The controlling method of claim 1 wherein the first data block is positioned farther away from a center of the storage carrier than the second data block, the linear velocity corresponding to the first data block being higher than the linear velocity corresponding to the second data block.

[c4] 4. The controlling method of claim 1 wherein a starting angular velocity of each data block is approximately equal, the starting angular velocity being an angular velocity corresponding to a starting position of each data block.

[c5] 5. The controlling method of claim 1 wherein the look-up table further stores an optical recording power for each data block, the data access device recording

data into the first data block according to the optical recording power corresponding to the first data block.

[c6] 6.The controlling method of claim 1 wherein the look-up table further stores a recording speed for each data block; and when the data access device records data into the first data block, the data access device records data into the data block according to the recording speed corresponding to the first data block.

[c7] 7.The controlling method of claim 6 wherein the data access device controls the recording speed according to a timing signal.

[c8] 8.The controlling method of claim 1 wherein the rotative mechanism of the optical storage carrier drive comprises a rotational speed controller capable of maintaining a constant linear velocity (CLV) of the rotative speed of the rotative mechanism, so that when the data access device records data from the first data block, the linear velocity of the data block passing by the data access device remains constant.

[c9] 9.The controlling method of claim 1 wherein each data unit comprises an addressing index for indexing the data units on the track, and the look-up table further stores a valid address range corresponding to each data block, the controlling method searching the addressing index of the targeted data unit from the valid address range in order to determine the targeted data block.

[c10] 10.An optical storage carrier drive for recording data to a track formed on an optical storage carrier, the track comprising a plurality of data units, and the plurality of data units being divided into a first data block and a second data block, the carrier drive comprising:  
a rotative mechanism for rotating the optical storage carrier;  
a data access device for recording data to the track of the optical storage carrier, the data units capable of passing by the data access device at a linear velocity; and  
a control device for controlling operations of the optical storage carrier drive, the control device having a look-up table which stores a corresponding linear velocity corresponding to each data unit,

wherein when the control device records data to a targeted data unit, the control device utilizes the look-up table to determine a targeted data block where the targeted data unit is located, controls the rotative mechanism rotated with the linear velocity corresponding to the targeted data block, and then records data into the targeted data unit by moving the data access device to the targeted data unit.

[c11] 11. The optical storage carrier drive of claim 10 wherein the number of data units located in each data block is approximately equal.

[c12] 12. The optical storage carrier drive of claim 10 wherein the first data block is positioned farther away from a center of the optical storage carrier than the second data block, the linear velocity corresponding to the first data block being larger than the linear velocity corresponding to the second data block.

[c13] 13. The optical storage carrier drive of claim 12 wherein a starting angular velocity of each data block is approximately equal, the starting angular velocity of a data block being an angular velocity corresponding to a starting position of each data block.

[c14] 14. The optical storage carrier drive of claim 10 wherein the look-up table further stores an optical recording power for each data block, the data access device recording data into the first data block according to the optical recording power corresponding to the first data block.

[c15] 15. The optical storage carrier drive of claim 10 wherein the look-up table further stores a recording speed for each data block; and when the data access device records data into the first data block, the data access device records data into the data block according to the recording speed corresponding to the first data block.

[c16] 16. The optical storage carrier drive of claim 15 wherein the control device controls the recording speed according to a timing signal.

[c17] 17. The optical storage carrier drive of claim 10 wherein the rotative mechanism comprises a rotational speed controller capable of maintaining a constant linear

velocity (CLV) of the rotative speed of the rotative mechanism, so that when the data access device records data from the first data block, the linear velocity of the data block passing by the data access device remains constant.

[c18] 18.The optical storage carrier drive of claim 10 wherein each data unit comprises an addressing index for indexing the data units on the track, and the look-up table further stores a valid address range corresponding to each data block, the controlling method searching the addressing index of the targeted data unit from the valid address range in order to determine the targeted data block.